Nos. 14-556, 14-562, 14-571 and 14-574

Supreme Court, U.S.
MAR 5 - 2015
OFFICE OF THE CLERK

In The

Supreme Court of the United States

JAMES OBERGEFELL, ET AL.,

Petitioners,

v.

RICHARD HODGES, DIRECTOR,
OHIO DEPARTMENT OF HEALTH, ET AL.,

Respondents.

On Writs Of Certiorari To The United States Court Of Appeals For The Sixth Circuit

BRIEF OF *AMICI CURIAE* GLMA: HEALTH PROFESSIONALS ADVANCING LGBT EQUALITY AND THE AMERICAN ACADEMY OF NURSING CONCERNING THE IMMUTABILITY OF SEXUAL ORIENTATION IN SUPPORT OF PETITIONERS

HECTOR VARGAS
EXECUTIVE DIRECTOR
GLMA: HEALTH PROFESSIONALS ADVANCING LGBT EQUALITY
1326 18th Street, NW, Suite 22
Washington, DC 20036
(202) 600-8037

NICHOLAS M. O'DONNELL
Counsel of Record
CAITLIN C. FAHEY
SULLIVAN & WORCESTER LLP
One Post Office Square
Boston, MA 02109
(617) 338-2800
nodonnell@sandw.com

Counsel for Amici Curiae

March 5, 2015

COCKLE LEGAL BRIEFS (800) 225-6964
WWW.COCKLELEGALBRIEFS.COM

TABLE OF CONTENTS

Page

TABLE OF AUTHORITIES iv

STATEMENT OF INTEREST OF *AMICI CURIAE* 1

I. GLMA: HEALTH PROFESSIONALS ADVANCING LGBT EQUALITY 1

II. THE AMERICAN ACADEMY OF NURSING 3

INTRODUCTION AND SUMMARY OF THE ARGUMENT 3

ARGUMENT 5

I. LAWS MUST BE ANALYZED WITH HEIGHTENED SCRUTINY WHEN THEY DISCRIMINATE AGAINST A SUSPECT CLASS 5

II. THE COURT HAS NOT VIEWED SEXUAL ORIENTATION AS BEHAVIORAL .. 9

III. HEIGHTENED SCRUTINY SHOULD APPLY TO SEXUAL ORIENTATION 10

IV. SEXUAL ORIENTATION IS AN INNATE HUMAN CHARACTERISTIC 12

A. Twin Studies Confirm the Biological Component of Sexual Orientation 13

B. Pedigree Studies Have Found that Sexual Orientation is Heritable in Families 16

TABLE OF CONTENTS – Continued

Page

C. Fraternal Birth Order Effect Confirms a Biological Origin of Sexual Orientation 17

D. Prenatal Hormone Levels Affect Sexual Orientation 19

1. Congenital Adrenal Hyperplasia 21

2. Xenoandrogens 22

E. Analysis of Male Genetic Material Indicates that Sexual Orientation is Heritable 23

F. Brain Studies Show the Biologic Roots of Sexual Orientation 25

G. The Overwhelming Majority of Humans Self-Describe Their Sexual Orientation as Innate 26

V. MISGUIDED EFFORTS TO CHANGE SEXUAL ORIENTATION PROVE THE INNATENESS OF THE TRAIT 27

VI. THE STUDIES CITED BY SUPPORTERS OF OTHER MARRIAGE BANS FAIL TO DEMONSTRATE THAT SEXUAL ORIENTATION IS BEHAVIORAL 32

A. Repeated Reliance on the Work of Lisa Diamond Actually Demonstrates that Sexual Orientation is Innate, Not the Reverse 32

TABLE OF CONTENTS – Continued

Page

B. Additional Studies Cited By Defenders of Other Marriage Bans Do Not Support the Conclusion that Sexual Orientation is Behavioral 38

CONCLUSION 40

TABLE OF AUTHORITIES

Page

CASES

Baskin v. Bogan, 766 F.3d 648 (7th Cir. 2014) 10

Bowen v. Gilliard, 483 U.S. 587 (1987) 5

Christian Legal Society Chapter of the University of California, Hastings College of Law v. Martinez, 130 S. Ct. 2971 (2010).....10

City of Cleburne, Texas v. Cleburne Living Center, 473 U.S. 432 (1985).....5, 6, 7

DeLeon v. Perry, 975 F. Supp. 2d 632 (W.D. Tex. 2014).....11

Frontiero v. Richardson, 411 U.S. 677 (1973).....5, 6

Golinski v. United States Office of Personnel Management, 824 F. Supp. 2d 968 (N.D. Cal. 2012).....5, 11

Graham v. Richardson, 403 U.S. 365 (1971).....8

Hernandez-Montiel v. Immigration and Naturalization Service, 225 F.3d 1084 (9th Cir. 2000).....6, 11

Karouni v. Gonzales, 399 F.3d 1163 (9th Cir. 2005).....11

Kerrigan v. Commissioner of Public Health, 289 Conn. 135, 957 A.2d 407 (2008).....6, 12

Lawrence v. Texas, 539 U.S. 558 (2003).....9, 10

In re Marriage Cases, 43 Cal. 4th 757, 183 P.2d 384 (2008).....12

Mathews v. Lucas, 427 U.S. 495 (1976).....8

TABLE OF AUTHORITIES – Continued

Page

Miller v. Albright, 523 U.S. 420 (1998) 8

Njenga v. United States Attorney General, 216 F. App'x 963 (11th Cir. 2007) 6

Nyquist v. Mauclet, 432 U.S. 1 (1977) 8

Obergefell v. Wymyslo, 962 F. Supp. 2d 968 (S.D. Ohio 2013) 11

Pedersen v. Office of Personnel Management, 881 F. Supp. 2d 294 (D. Conn. 2012) 8, 12

Perry v. Schwarzenegger, 704 F. Supp. 2d 921 (N.D. Cal. 2010) 11, 28

Pickup v. Brown, 728 F.3d 1042 (9th Cir. 2013) 30, 31

San Antonio Independent School District v. Rodriguez, 411 U.S. 1 (1973) 7

United States v. Carolene Products Company, 304 U.S. 144 (1938) 8

United States v. Windsor, 133 S. Ct. 2675 (2013) 10, 39

Watkins v. United States Army, 875 F.2d 699 (9th Cir. 1989) 7, 11

Windsor v. United States, 699 F.3d 169 (2d Cir. 2012) 5

Zavaleta-Lopez v. United States Attorney General, 360 F. App'x 331 (3d Cir. 2010) 6

TABLE OF AUTHORITIES – Continued

Page

DOCKETED CASES

Amicus Curiae Brief of Frederick Douglass Foundation in the matter of *Golinksi v. Office of Personnel Mgmt.* (9th Cir. 2013) (Nos. 12-15-388 and 12-15-409) 32, 33, 36

Amicus Curiae Brief of Dr. Paul McHugh in Support of Defendants-Appellants and Reversal, *Brenner v. Armstrong* (11th Cir. Nov. 11, 2014) (No. 14-14061) 7, 38

Amicus Curiae Brief of Dr. Paul McHugh in Support of Hollingsworth and Bipartisan Legal Advocacy Group Addressing the Merits and Supporting Reversal, *Hollingsworth v. Perry*, 133 S. Ct. 2652 (2013) (No. 12-144).....32

Amicus Curiae Brief of Survivors of Sexual Orientation Change Efforts, In Support of Defendants-Appellants Urging Reversal, *Welch v. Brown* (2013) (No. 13-15023).....31

Brief of Respondent, Bipartisan Legal Advisory Group of the House of Representatives, *United States v. Windsor*, 133 S. Ct. 2675 (2013) (No. 12-307) 39

Expert Affidavit of Lisa M. Diamond, Ph.D. *Pedersen et al. v. Office of Personnel Management et al.*, No. 3:10-cv-01750-VLB (D. Conn.), Sept. 14, 2011, ECF No. 99 37

TABLE OF AUTHORITIES – Continued

Page

OTHER AUTHORITIES

Adelson, S.A., et al., *Practice Parameters on Gay, Lesbian, or Bisexual Sexual Orientation, Gender Nonconformity, and Gender Discordance in Children and Adolescents*, JOURNAL OF THE AMERICAN ACADEMY OF CHILD AND ADOLESCENT PSYCHIATRY (Sept. 2012) 29

Allen, L.S., et al., *Sexual Orientation and the Size of the Anterior Commissure in the Human Brain*, PROCEEDINGS, NATIONAL ACADEMY OF SCIENCES (Aug. 1992) 25

American Academy of Pediatrics, *Policy Statement, Homosexuality and Adolescence*, AMERICAN ACADEMY OF PEDIATRICS (1993).....30

American Psychological Association, *Just the Facts About Sexual Orientation and Youth, A Primer For Principals, Educators and School Personnel*, reproduced and available at http://www.apa.org/pi/lgbt/resources/just-the-facts.pdf (2008).....29

American Psychological Association, *Report of the American Psychological Association Task Force on Appropriate Therapeutic Responses to Sexual Orientation* (2009).....28, 30

Bagemihl, B., *Biological Exuberance: Animal Homosexuality and Natural Diversity* (St. Martin's Press 1999) 9

TABLE OF AUTHORITIES – Continued

Page

Bailey, J.M., et al., *A Genetic Study of Male Sexual Orientation*, ARCHIVES OF GENERAL PSYCHIATRY (Dec. 1991) 14

Bailey, J.M. et al., *A Family History Study of Male Sexual Orientation Using Three Independent Samples*, BEHAVIOR GENETICS (1999) ...16, 26

Bailey, J.M., et al., *Genetic and Environmental Influences on Sexual Orientation and Its Correlates in an Australian Twin Sample*, JOURNAL OF PERSONALITY AND SOCIAL PSYCHOLOGY (March 2000) 15

Baron, M., *Genetics and Human Sexual Orientation*, BIOLOGICAL PSYCHIATRY (June 1993) 15

Bearman, P., et al., *Opposite-Sex Twins and Adolescent Same-Sex Attraction*, 107 AM. J. OF SOCIOLOGY 1179, 1180 (2002) 38, 39

Blanchard, R., *Detecting and Correcting for Family Size Differences in the Study of Sexual Orientation and Fraternal Birth Order*, ARCHIVES OF SEXUAL BEHAVIOR (July 2014) 18

Blanchard, R., *Fraternal Birth Order and the Maternal Immune Hypothesis of Male Homosexuality*, HORMONES AND BEHAVIOR (Sept. 2001) 18, 19

Blanchard, R., *Quantitative and Theoretical Analyses of the Relation Between Older Brothers and Homosexuality in Men*, JOURNAL OF THEORETICAL BIOLOGY (Sept. 21, 2004) 18

TABLE OF AUTHORITIES – Continued

Page

Blocklandt, S., et al., *Extreme Skewing of X Chromosome Inactivation in Mothers of Homosexual Men*, HUMAN GENETICS (Feb. 2006) 24

Bogaert, A.F., et al., *Sexual Orientation, Fraternal Birth Order, and the Maternal Immune Hypothesis*, FRONTIERS IN NEUROENDOCRINOLOGY (2011).....17, 18

Bouchard, T.J., et al., *Sources of Human Psychological Differences: the Minnesota Study of Twins Reared Apart*, SCIENCE (Oct. 12, 1990).....15

Breedlove, S.M., *Organizational Hypothesis: Instances of the Fingerpost*, ENDOCRINOLOGY (Sept. 2010) 22

Carey, Benedict, *Psychiatry Giant Sorry for Backing Gay 'Cure'*, NEW YORK TIMES (May 18, 2012).....31

Cohen-Bendahan, C.C., et al., *Is There an Effect of Prenatal Testosterone on Aggression and Other Behavioral Traits? A Study Comparing Same-Sex and Opposite-Sex Twin Girls*, HORMONES AND BEHAVIOR 47 (2005), available at www.sciencedirect.com 20

Cohen-Bendahan, C.C., et al., *Prenatal Exposure to Testosterone and Functional Cerebral Lateralization: A Study In Same-Sex and Opposite-Sex Twin Girls*, PSYCHONEUROENDOCRINOLOGY (Aug. 2004), available at www.sciencedirect.com 20

TABLE OF AUTHORITIES – Continued

Page

Culbert, K.M., et al., *Prenatal Hormone Exposure and Risk for Eating Disorders: a Comparison of Opposite-Sex and Same-Sex Twins*, ARCHIVES OF GENERAL PSYCHIATRY (Mar. 2008) 21

Dempsey P.J., et al., *Increased Tooth Crown Size in Females With Twin Brothers: Evidence For Hormonal Diffusion Between Human Twins in Utero*, AMERICAN JOURNAL OF HUMAN BIOLOGY: THE OFFICIAL JOURNAL OF THE HUMAN BIOLOGY COUNCIL (Sept. 1999) 20

Dessens, A.B., et al., *Prenatal Exposure to Anticonvulsants and Psychosexual Development*, ARCHIVES OF SEXUAL BEHAVIOR (Feb. 1999) 23

Dessens, A.B., et al., *Association of Prenatal Phenobarbital and Phenytoin Exposure with Genital Anomalies and Menstrual Disorders*, TERATOLOGY (Oct. 2001).....23

Diamond, L., *Female Bisexuality from Adolescence to Adulthood: Results from a 10-Year Longitudinal Study*, DEVELOPMENTAL PSYCHOLOGY (2008).....34

Diamond, L., *The Doctor is Out . . . and Outspoken: An Interview with Dr. Lisa Diamond*, HUFFINGTON POST (May 12, 2012).....36

Diamond, L., *Sexual Identity, Attractions, and Behavior Among Young Sexual-Minority Women Over a 2-Year Period*, DEVELOPMENTAL PSYCHOLOGY (2000) 33, 34

TABLE OF AUTHORITIES – Continued

Page

Ehrhardt A.A., et al., *Sexual Orientation After Prenatal Exposure to Exogenous Estrogen*, ARCHIVES OF SEXUAL BEHAVIOR (Feb. 1985) 23

Ehrhardt, A.A., et al., *Psychosexual Development: an Examination of the Role of Prenatal Hormones*, CIBA FOUNDATION SYMPOSIUM (Mar. 14-16, 1978) 21

Gay and Lesbian Medical Association, GMLA Marriage Initiative: Same Sex Marriage and Health (Sept. 2008), available at http://glma.org/document/docWindow.cfm?fuseaction=document.viewDocument&documentid=146&documentFormatId=236 2

Graham, T.C., *The Shifting Doctrinal Face of Immutability*, 19 VIRGINIA JOURNAL OF SOCIAL POLICY & THE LAW 169 (Spring 2012) 8

Haldeman, D., *The Practice and Ethics of Sexual Orientation Conversion Therapy*, JOURNAL OF CONSULTING & CLINICAL PSYCHOLOGY (1994) 28

Hall, L.S. and Love, C.T., *Finger-Length Ratios in Female Monozygotic Twins Discordant for Sexual Orientation*, ARCHIVES OF SEXUAL BEHAVIOR (Feb. 2003) 16

Hamer, D.H., et al., *A Linkage Between DNA Markers on the X Chromosome and Male Sexual Orientation*, SCIENCE (Jul. 1993) 24

TABLE OF AUTHORITIES – Continued

Page

Herek, G.M., et al., *Demographic, Psychological, and Social Characteristics of Self-Identified Lesbian, Gay, and Bisexual Adults in a US Probability Sample*, SEXUALITY RESEARCH & SOCIAL POLICY (2010) 27

Hines, M., et al., *Androgen and the Development of Human Sex-Typical Behavior: Rough-and-Tumble Play and Sex of Preferred Playmates in Children With Congenital Adrenal Hyperplasia (CAH)*, CHILD DEVELOPMENT (Aug. 1994).....22

Iemmola, F., et al., *New Evidence of Genetic Factors Influencing Sexual Orientation in Men*, ARCHIVES OF SEXUAL BEHAVIOR (2009) 19

Jannini, E.A., et al., *Male Homosexuality: Nature or Culture?* CONTROVERSIES IN SEXUAL MEDICINE (2010) 18, 19

Kirk, K.M., et al., *Measurement Models for Sexual Orientation in a Community Twin Sample*, BEHAVIOR GENETICS (2000).....14

Langstrom, N., et al., *Genetic and Environmental Effects of Same-Sex Sexual Behavior: A Population Study of Twins in Sweden*, ARCHIVES OF SEXUAL BEHAVIOR (2010).....36

LeVay, S., *A Difference in Hypothalamic Structure Between Heterosexual and Homosexual Men*, SCIENCE (Aug. 1991).....25, 26

TABLE OF AUTHORITIES – Continued

Page

Marcosson, S.A., *Constructive Immutability*, 3 UNIVERSITY OF PENNSYLVANIA JOURNAL OF CONSTITUTIONAL LAW 646 (2001) 8

Meyer-Bahlburg H.F., et al., *Gender Development in Women With Congenital Adrenal Hyperplasia as a Function of Disorder Severity*, ARCHIVES OF SEXUAL BEHAVIOR (Dec. 2006) 22

Meyer-Bahlburg, H.F., et al., *Sexual Orientation in Women With Classical or Non-Classical Congenital Adrenal Hyperplasia as a Function of Degree of Prenatal Androgen Excess*, ARCHIVES OF SEXUAL BEHAVIOR (Feb. 2008) 21

Money, J., et al., *Bisexually Concordant, Heterosexually and Homosexually Discordant: A Matched-Pair Comparison of Male and Female Adrenogenital Syndrome*, PSYCHIATRY (May 1987) 21

Mustanski, B.S., et al., *A Critical Review of Recent Biological Research on Human Sexual Orientation*, ANNUAL REVIEW OF SEX RESEARCH (2002) 13, 17

Mustanski, B.S., et al., *A Genomewide Scan of Male Sexual Orientation*, HUMAN GENETICS (2005) 16, 17

TABLE OF AUTHORITIES – Continued

Page

Mustanski, B.S., et al., *Mental Health Disorders, Psychological Distress, and Suicidality in a Diverse Sample of Lesbian, Gay, Bisexual, and Transgender Youths*, AMERICAN JOURNAL OF PUBLIC HEALTH (Dec. 2010) 17

Newcomb M.E., et al., *Examining Risk and Protective Factors for Alcohol Use in Lesbian, Gay, Bisexual, and Transgender Youth: a Longitudinal Multilevel Analysis*, JOURNAL OF STUDIES ON ALCOHOL AND DRUGS (2012).....17

Nordenskjold, A., et al., *Type of Mutation and Surgical Procedure Affect Long-Term Quality of Life For Women With Congenital Adrenal Hyperplasia*, JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM (Feb. 2008).....22

Nygren, U., et al., *Voice Characteristics in Women With Congenital Adrenal Hyperplasia Due to 21-Hydroxylase Deficiency*, CLINICAL ENDOCRINOLOGY (OXF.) (Jan. 2009).....22

Omoto, A.M., et al., *What We Got Wrong About Sexual Identity Development: Unexpected Findings From a Longitudinal Study of Young Women in Sexual Orientation and Mental Health: Examining Identity and Development in Lesbian, Gay, and Bisexual People*, SEXUAL ORIENTATION AND MENTAL HEALTH: EXAMINING IDENTITY AND DEVELOPMENT IN LESBIAN, GAY, AND BISEXUAL PEOPLE, 79 (2005).....35

TABLE OF AUTHORITIES – Continued

Page

Pasterski, V., et al., *Increased Aggression and Activity Level in 3- to 11-Year-Old Girls With Congenital Adrenal Hyperplasia (CAH)*, HORMONES AND BEHAVIOR (Sept. 2007) 22

Pattatucci, A.M.L., et al., *Development and Familiality of Sexual Orientation in Females*, BEHAVIOR GENETICS (Sept. 1995).....16

Pattatucci, A.M.L., *Biopsychosocial Interactions and the Development of Sexual Orientation, in Lesbian, Gay, and Bisexual Identities in Families* (Oxford University Press 1998) 24

Pattatucci, A.M.L., *Molecular Investigations into Complex Behavior: Lessons from Sexual Orientation Studies*, THE INTERNATIONAL JOURNAL OF POPULATION BIOLOGY AND GENETICS (Apr. 1998) 24

Peper, J.S., et al., *Does Having a Twin-Brother Make For a Bigger Brain?*, EUROPEAN JOURNAL OF ENDOCRINOLOGY 160 (Feb. 18, 2009).....21

Pillard, R.C., et al., *Evidence of Familial Nature of Male Homosexuality*, ARCHIVES OF GENERAL PSYCHIATRY (Aug. 1986) 16

Pillard, R.C., *Homosexuality from a Familial and Genetic Perspective*, TEXTBOOK OF HOMOSEXUALITY AND MENTAL HEALTH (R.P. Cabaj, et al., eds. 1996) 15, 16, 17

Pillard, R.C., *The Search for a Genetic Influence on Sexual Orientation*, SCIENCE AND HOMOSEXUALITIES (V.A. Rosario, ed. 1997) 15

TABLE OF AUTHORITIES – Continued

Page

Posner, R.A., *Sex and Reason* (Harvard University Press 1992) 28

Ryan, C., et al., *Family Rejection as a Predictor of Negative Health: Outcomes in White and Latino Lesbian, Gay and Bisexual Young Adults*, JOURNAL OF PEDIATRICS (2009) 29

Sanders, A.R., et al., *Genome-Wide Scan Demonstrates Significant Linkage for Male Sexual Orientation*, PSYCHOLOGICAL MEDICINE (Nov. 2014) 24

Savic, I., et al., *PET and MRI Show Differences in Cerebral Asymmetry and Functional Connectivity between Homo- and Heterosexual Subjects*, PROCEEDINGS OF THE NATIONAL ACADEMIES OF SCIENCES OF THE UNITED STATES OF AMERICA (Aug. 2008) 26

Shapiro, M.R., *Treading the Supreme Court's Murky Immutability Waters*, 38 GONZAGA LAW REVIEW 409 (2002-03) 8

Swaab, D.F. et al., *An Enlarged Suprachiasmatic Nucleus in Homosexual Men*, BRAIN RESEARCH (Dec. 1990) 26

Swaab, D.F., et al., *Sexual Differentiation of the Human Brain in Relation to Gender Identity and Sexual Orientation*, FUNCTIONAL NEUROLOGY (Jan.-Mar. 2009) 20

Turner, W.J., *Homosexuality, Type 1: An Xq28 Phenomenon*, ARCHIVES OF SEXUAL BEHAVIOR (Nov. 1995) 14

TABLE OF AUTHORITIES – Continued

Page

Voracek, M., et al., *Digit Ratio (2D:4D) in Twins: Heritability Estimates and Evidence For a Masculinized Trait Expression in Women From Opposite-Sex Pairs*, PSYCHOLOGICAL REPORTS (Feb. 2007) 20

Whitam, F.L., et al., *Homosexual Orientation in Twins: A Report on 61 Pairs and Three Triplet Sets*, ARCHIVES OF SEXUAL BEHAVIOR (June 1993) 14, 15

Yoshino, K., *Assimilationist Bias in Equal Protection: The Visibility Presumption and the Case of "Don't Ask, Don't Tell,"* 108 YALE LAW JOURNAL 485 (1998) 9

CONSTITUTIONS

Kentucky Constitution, § 233A 4

Michigan Constitution, Article I, § 25 3

Ohio Constitution, Article XV, § 11 3

Tennessee Constitution, Article XI, § 18 3

STATUTES

Kentucky Revised Statutes §§ 402.005-.045 4

Ohio Revised Code § 3101.01 3

Tennessee Code § 36-6-13 4

STATEMENT OF INTEREST OF *AMICI CURIAE*

I. GLMA: HEALTH PROFESSIONALS ADVANCING LGBT EQUALITY

Amicus Curiae[1] GLMA: Health Professionals Advancing LGBT Equality ("GLMA"), a 501(c)(3) corporation with no parent corporation, is the largest and oldest association of lesbian, gay, bisexual and transgender ("LGBT") healthcare and health professionals of all disciplines, including physicians, nurses, physician assistants, behavioral health specialists and researchers. GLMA's mission is to ensure equality in healthcare for LGBT individuals and healthcare professionals, using the medical and health expertise of GLMA members in public policy and advocacy, professional education, patient education and referrals, and the promotion of research. GLMA was founded in 1981 as the American Association of Physicians for Human Rights (changing its name to the Gay and Lesbian Medical Association in 1994), in part as a response to the call to advocate for policy and services to address the growing health crisis that would become the HIV/AIDS epidemic. Since then,

---

[1] Counsel for all parties consented to the filing of this brief by letters on file with the Clerk of the Court, and have received directly notice of the *Amici Curiae's* intention to file this brief pursuant to Rule 37 of this Court. No counsel for any party authored this brief in whole or in part, and neither any such counsel nor any party nor any person or entity other than *Amici Curiae* or their members or their counsel made a monetary contribution intended to fund the preparation or submission of this brief.

GLMA's mission has broadened to address the full range of health issues affecting LGBT people, including ensuring that all healthcare providers provide a welcoming environment to LGBT individuals and their families and are competent to address specific health disparities affecting LGBT people.

GLMA's 2008 publication, *Same-Sex Marriage and Health* (O'Hanlan, K., et al.),[2] documents the large body of scientific research indicating that the denial of marriage rights to gay men and lesbians can negatively impact their health and well-being and that of their children. The denial of marriage rights to same-sex couples is a form of discrimination that perpetuates stigma. Because marriage can help protect and promote the mental and physical health of lesbians and gay men and their children, GLMA supports efforts to secure marriage equality for same-sex couples.

---

[2] Kate O'Hanlan MD, a Gynecologic Oncology surgeon, and past President of GLMA, has made significant contributions to the field of sexual orientation and marriage equality, and helped compile the scientific literature referenced in GLMA's submission as *Amicus Curiae*. Among her many accomplishments, Dr. O'Hanlan gives invited lectures about the science of gender identity and sexual orientation at grand rounds in universities and medical schools. The GLMA study cited above is available at http://glma.org/document/docWindow.cfm?fuseaction=document.viewDocument&documentid=146&documentFormatId=236.

II. THE AMERICAN ACADEMY OF NURSING

Amicus Curiae the American Academy of Nursing (the "Academy") advances health policy and practice through the generation, synthesis, and dissemination of nursing knowledge. Its over 2300 Fellows are nursing's most accomplished leaders in education, management, practice and research. The Academy supports marriage equality as part of a broad commitment to human rights and in recognition of the adverse health impact of discrimination and stigma. The Academy's 2012 statement on "Support for Marriage Equality" asserts its position that marriage equality will contribute to achieving access to high-quality, comprehensive, culturally sensitive, dignified and respectful health care for all persons.

INTRODUCTION AND SUMMARY OF THE ARGUMENT

GLMA and the Academy submit this brief as *Amici Curiae* to make clear the scientific and empirical record concerning sexual orientation. Put simply, sexual orientation is an innate human characteristic that is treated unequally in the prohibition of marriage for same-sex couples by Article I, § 25 of the Michigan Constitution, and the constitutional and statutory bans on recognition of legal same-sex marriages granted in other states by Article XV, § 11 of the Ohio Constitution and Ohio Revised Code § 3101.01; Article XI, § 18 of the Tennessee Constitution and

Tennessee Code § 36-6-13; and § 233A of the Kentucky Constitution and Kentucky Revised Statutes §§ 402.005-.045 (the "Marriage Bans"). Government discrimination on that basis warrants heightened constitutional scrutiny. Although proving that a particular characteristic is immutable is not a required element to apply heightened scrutiny to a legal classification, the Court's prior protection of immutable traits is particularly apt in the case of the Marriage Bans, which single out a community for one of its inherent characteristics in depriving it of the ability to marry.[3] *All* credible study of sexual orientation establishes that genetic, hereditary and biological influences are major factors in determining sexual orientation.

Scientists have studied the determining factors of sexual orientation from a variety of perspectives. These include family studies, twin studies, sibling studies, brain studies, prenatal hormone studies and surveys. Not one shows a post-natal, behavioral cause sufficient to account for differences in sexual orientation between people. Moreover, misguided attempts to change individuals' sexual orientation have had results that ranged from ineffective at best to tragic at worst. Even apart from the science, experience with gay and non-gay people reveals that sexual orientation is a deep-seated part of a person's identity.

---

[3] These laws are also irrational by any measure, but this brief is devoted to the scientific consensus on the issue of immutability.

The Marriage Bans persecute a group of Americans solely on the basis of something about themselves that is fundamentally determined, and the Marriage Bans are unconstitutional as a result.

ARGUMENT

I. LAWS MUST BE ANALYZED WITH HEIGHTENED SCRUTINY WHEN THEY DISCRIMINATE AGAINST A SUSPECT CLASS

If the government discriminates against a suspect or quasi-suspect class, the Court has reviewed the law with heightened scrutiny. *City of Cleburne, Tex. v. Cleburne Living Ctr.*, 473 U.S. 432, 437, 440-41 (1985). The Court takes into account four considerations when determining whether a class is suspect or quasi-suspect, and thus entitled to heightened scrutiny: historical discrimination, defining characteristics relative to the ability to contribute to society, "obvious, immutable, or distinguishing characteristics," and minority status and/or lack of political power. *Windsor v. United States*, 699 F.3d 169, 181-82 (2d Cir. 2012), *aff'd*, 133 S. Ct. 2675 (2013); *Frontiero v. Richardson*, 411 U.S. 677, 686 (1973) (plurality opinion); *see also Bowen v. Gilliard*, 483 U.S. 587, 602 (1987); *Cleburne*, 473 U.S. at 440-41; *Golinski v. U.S. Office of Pers. Mgmt.*, 824 F. Supp. 2d 968, 983 (N.D. Cal. 2012). The Court views classifications based on race, national origin, and alienage as "suspect" and applies strict scrutiny where the

government discriminates on these bases. *See Cleburne,* 473 U.S. at 440-41. Classifications based on gender and illegitimacy are viewed as "quasi-suspect" and the Court applies intermediate scrutiny where the government discriminates on these bases. *Id.* Discrimination is "'more clearly unfair'" when it is based on a characteristic over which people have no control, as those people are not responsible for the characteristic and have no ability to change it. *Kerrigan v. Comm'r of Pub. Health*, 289 Conn. 135, 183, 957 A.2d 407, 436 (2008) (quoting *High Tech Gays v. Def. Indus. Sec. Clearance Office*, 909 F.2d 375, 377 (9th Cir. 1990)). Differentiating among people based on an immutable characteristic violates "'the basic concept of our system that legal burdens should bear some relationship to individual responsibility.'" *Frontiero*, 411 U.S. at 686 (quoting *Weber v. Aetna Cas. & Sur. Co.*, 406 U.S. 164, 175 (1972)).

A characteristic should be considered immutable if it is "so fundamental to the identities or consciences of its members that members either cannot or should not be required to change it." *Hernandez-Montiel v. I.N.S.*, 225 F.3d 1084, 1093 (9th Cir. 2000), *overruled in part on other grounds by Thomas v. Gonzales*, 409 F.3d 1177 (9th Cir. 2005); *see also Njenga v. U.S. Att'y Gen.*, 216 F. App'x 963, 966-67 (11th Cir. 2007) (immutable characteristics are fundamental to individual identities or consciences); *Zavaleta-Lopez v. U.S. Att'y Gen.*, 360 F. App'x 331, 333 (3d Cir. 2010) ("[I]mmutable characteristics [are those] such as race, gender, or a prior position, status, or condition, or

characteristics that are capable of being changed but are of such fundamental importance that persons should not be required to change them, such as religious beliefs."). In other words, a trait is immutable if "changing it would involve great difficulty, such as requiring a major physical change or a traumatic change of identity." *Watkins v. U.S. Army*, 875 F.2d 699, 726 (9th Cir. 1989) (en banc) (Norris, J., concurring); *Cleburne*, 473 U.S. at 440-41.

Although not advanced by the Respondents, defenders of other marriage bans have argued that, to apply heightened scrutiny to sexual orientation, the Supreme Court requires a finding that sexual orientation is an immutable characteristic. *See, e.g.*, *Amicus Curiae* Brief of Dr. Paul McHugh in Support of Defendants-Appellants and Reversal at 2, *Brenner v. Armstrong*, No. 14-14061 (11th Cir. Nov. 11, 2014) ("McHugh Br."). This is incorrect. The Court has frequently defined the "traditional indicia of suspectness" without reference to immutability. *See, e.g.*, *San Antonio Indep. Sch. Dist. v. Rodriguez*, 411 U.S. 1, 28 (1973) (defining the "traditional indicia of suspectness" as those marking a class "saddled with such disabilities, or subjected to such a history of purposeful unequal treatment, or relegated to such a position of political powerlessness as to command extraordinary protection from the majoritarian political process"). Groups that are defined by a changeable characteristic have been held to be a suspect class – without mention of immutability. Aliens are a suspect class, despite the fact that non-citizens can

and often do become citizens of their own initiative. *Graham v. Richardson*, 403 U.S. 365, 372 (1971); *see also Nyquist v. Mauclet*, 432 U.S. 1, 9 n.11 (1977) (rejecting the dissent's argument that "strict scrutiny is inappropriate because under § 661(3) a resident alien can voluntarily withdraw from disfavored status"). Similarly, non-marital children are recognized as a quasi-suspect class even despite the fact that illegitimacy, at least for legal purposes, is also a mutable characteristic. *Mathews v. Lucas*, 427 U.S. 495, 505-06 (1976); *see also Miller v. Albright*, 523 U.S. 420, 431 (1998) (recognizing that a non-marital child can be "legitimated" through actions of the father); *Pedersen v. Office of Pers. Mgmt.*, 881 F. Supp. 2d 294, 320 (D. Conn. 2012).

Indeed, of the four considerations set forth in *United States v. Carolene Products Co.*, 304 U.S. 144 (1938), "immutability is the one that the Court has most readily abandoned, and that scholars have most persistently criticized." Graham, T.C., *The Shifting Doctrinal Face of Immutability*, 19 VA. J. POL'Y & L. 169, 179 (Spring 2012); *see also* Marcosson, S.A., *Constructive Immutability*, 3 U. PA. J. CONST. L. 646, 647 (2001) (noting that the concept of immutability has been in decline in Supreme Court equal protection analysis and may even be considered irrelevant); Shapiro, M.R., *Treading the Supreme Court's Murky Immutability Waters*, 38 GONZ. L. REV. 409, 412 (2002-03) (asserting that the Supreme Court appears

interested in "phasing out the immutability concept").[4]

II. THE COURT HAS NOT VIEWED SEXUAL ORIENTATION AS BEHAVIORAL

Although the Court has never specifically addressed, in an equal protection analysis, whether laws discriminating on the basis of sexual orientation should be subject to heightened scrutiny, it has also declined the opportunity to hold sexual orientation to be behavioral. *Lawrence v. Texas* stated that: "[w]hen homosexual *conduct*[5] is made criminal by the law of the State, that declaration in and of itself is an invitation to subject homosexual *persons* to discrimination both in the public and in the private spheres." 539 U.S. 558, 575 (2003) (emphasis added). Similarly, in Justice O'Connor's concurrence, decided upon equal protection grounds, she states, "[w]hile it is true that the law applies only to conduct, the conduct targeted by this law is conduct that is closely

---

[4] *See also* Yoshino, K., *Assimilationist Bias in Equal Protection: The Visibility Presumption and the Case of "Don't Ask, Don't Tell,"* 108 YALE L.J. 485, 490-91 (1998) (criticizing the concept of immutability and arguing for its demise in constitutional analysis).

[5] Further to the points in Section IV, below, Bruce Bagemihl's book *Biological Exuberance: Animal Homosexuality and Natural Diversity* (St. Martins Press 1999) revealed that over 450 species of animals (birds, mammals, lizards, insects) engage in repeated sexual behaviors with their same sex, in the presence of opposite sex potentials, some in life-long pairings.

correlated with being homosexual. Under such circumstances, Texas' sodomy law is targeted at more than conduct. It is instead directed toward gay persons *as a class*." *Id.* at 583 (O'Connor, J., concurring) (emphasis added).

In a related vein, the Court found that "[o]ur decisions have declined to distinguish between status and conduct in this context," *i.e.* sexual orientation. The Court rejected the Christian Legal Society's ("CLS") claim that Hastings College of Law violated its First Amendment rights by refusing to recognize CLS as a registered student organization for requiring agreement with the belief that sexual activity should not occur outside of marriage between a man and a woman. *Christian Legal Soc'y Chapter of the Univ. of Cal., Hastings Coll. of the Law v. Martinez*, 130 S. Ct. 2971, 2990 (2010).

Most recently, in *United States v. Windsor*, the Court had the opportunity to distance itself from the language in *Lawrence* and *Martinez*; however, it declined to do so. 133 S. Ct. 2675 (2013).

III. HEIGHTENED SCRUTINY SHOULD APPLY TO SEXUAL ORIENTATION

Persuasive authority from other courts, both pre and post-*Lawrence*, properly finds sexual orientation to be an immutable characteristic. *See, e.g.*, *Baskin v. Bogan*, 766 F.3d 648, 657 (7th Cir.), *cert. denied*, 135 S. Ct. 316 (2014) ("there is little doubt that sexual orientation . . . is an immutable (and probably an

innate, in the sense of in-born) characteristic rather than a choice); *Hernandez-Montiel*, 225 F.3d at 1093 ("[s]exual orientation and sexual identity are immutable; they are so fundamental to one's identity that a person should not be required to abandon them"); *Karouni v. Gonzales*, 399 F.3d 1163, 1173 (9th Cir. 2005) (agreeing that homosexuality is a fundamental aspect of human identity and seeing "no appreciable difference between an individual . . . being persecuted for being a homosexual and being persecuted for engaging in homosexual acts"); *Watkins*, 875 F.2d at 726 (en banc) (Norris, J., concurring) (finding sexual orientation to be immutable in the eyes of the Equal Protection Clause because immutability is satisfied when the identifying trait is "so central to a person's identity that it would be abhorrent for government to penalize a person for refusing to change [it]"); *DeLeon v. Perry*, 975 F. Supp. 2d 632, 652 (W.D. Tex. 2014) ("the scientific consensus is that sexual orientation is an immutable characteristic"); *Obergefell v. Wymyslo,* 962 F. Supp. 2d 968, 991 (S.D. Ohio 2013) ("Under any definition of immutability, sexual orientation clearly qualifies. There is now broad medical and scientific consensus that sexual orientation is immutable."); *Perry v. Schwarzenegger*, 704 F. Supp. 2d 921, 966 (N.D. Cal. 2010) ("No credible evidence supports a finding that an individual may, through conscious decision, therapeutic intervention or any other method, change his or her sexual orientation."); *Golinski*, 824 F. Supp. 2d at 987 ("The Court finds that a person's sexual orientation is so fundamental to one's identity that a person should not be required

to abandon it. Therefore, this factor weighs in favor of the application of heightened scrutiny."); *Pedersen*, 881 F. Supp. 2d at 326 (finding sexual orientation to be an immutable characteristic); *In re Marriage Cases*, 43 Cal. 4th 757, 842, 183 P.3d 384, 442 (2008) ("Because a person's sexual orientation is so integral an aspect of one's identity, it is not appropriate to require a person to repudiate or change his or her sexual orientation in order to avoid discriminatory treatment."). As the Connecticut Supreme Court put it:

> In view of the central role that sexual orientation plays in a person's fundamental right to self-determination, we fully agree with the plaintiffs that their sexual orientation represents the kind of distinguishing characteristic that defines them as a discrete group for purposes of determining whether that group should be afforded heightened protection under the equal protection provisions of the state constitution.

Kerrigan, 289 Conn. at 186-87, 957 A.2d at 438.

IV. SEXUAL ORIENTATION IS AN INNATE HUMAN CHARACTERISTIC

Whatever weight that the Court ultimately gives to the importance of immutability, the innate nature of sexual orientation fits squarely within the contours of the scope of equal protection previously expressed by this Court and discriminated against by the Marriage Bans. Indeed, sexual orientation is a perfect

example of why certain laws require heightened scrutiny. For all citizens to enjoy the equal protection of the law, none can be the target of the law for something inherent to their very humanity. Legion scientific evidence and study proves that sexual orientation is just such a trait. Moreover, the scientific evidence is equally clear that the consequences of trying to change that orientation are entirely ineffective and have disastrous personal and social consequences.

No peer-reviewed published scientific studies support the hypotheses that life experience causes homosexuality, that sexual orientation is learned, that there is a psychological cause of homosexuality, or that sexual orientation is chosen. This scientific consensus comes from a broad range of methodologies that includes pedigree studies (the research of family history); prenatal hormone studies; twin studies; molecular biology; brain anatomical studies, biophysiological studies; and hormonal linkages. These studies themselves fall primarily into either prenatal hormone or genetic studies. *See* Mustanski, B.S., et al., *A Critical Review of Recent Biological Research on Human Sexual Orientation*, ANNUAL REVIEW OF SEX RESEARCH (2002).

A. Twin Studies Confirm the Biological Component of Sexual Orientation.

Twins present a unique opportunity to control for genetics and environment. Identical, or monozygotic,

twins share identical genetic material. Fraternal twins are, genetically speaking, no different from siblings born in sequence, but can be compared relative to identical twins as a control for environmental factors. Moreover, in circumstances where identical twins are raised separately, examination of traits gives additional insight into whether that trait's driving force is genetic or environmental.

Overall, a homosexual identical twin is generally *twice as likely* to share that same-sex attraction with his or her identical twin as is a gay fraternal twin with his or her non-identical twin. In one study the ratio was 52% to 22%. *See* Bailey, J.M., et al., *A Genetic Study of Male Sexual Orientation*, ARCHIVES OF GENERAL PSYCHIATRY (Dec. 1991); *see also* Whitam, F.L., et al., *Homosexual Orientation in Twins: A Report on 61 Pairs and Three Triplet Sets*, ARCHIVES OF SEXUAL BEHAVIOR (June 1993) ("Whitam 1993"); Turner, W.J., *Homosexuality, Type 1: An Xq28 Phenomenon*, ARCHIVES OF SEXUAL BEHAVIOR (Nov. 1995). A recent comprehensive study involving a large cohort (4,901) of twins in Australia found "statistically significant support for the existence of significant genetic contributions to the trait of homosexuality." Kirk, K.M., *Measurement Models for Sexual Orientation in a Community Twin Sample*, BEHAV. GENET. (2000). Any such genetic contribution is, by definition, innate.

Looking then to studies of adopted twins raised in separate environments, approximately half of the heritability in sexual orientation appears attributable

to a genetic component. Bouchard, T.J., et al., *Sources of Human Psychological Differences: the Minnesota Study of Twins Reared Apart*, SCIENCE (Oct. 12, 1990). Critically, however, identical twins, whether raised together or raised apart, showed roughly the same outcome. Pillard, R.C., *Homosexuality From a Familial and Genetic Perspective*, in TEXTBOOK OF HOMOSEXUALITY AND MENTAL HEALTH (R.P. Cabaj, et al., eds. 1996) ("Pillard 1996"); Pillard, R.C., *The Search for a Genetic Influence on Sexual Orientation*, SCIENCE AND HOMOSEXUALITIES (V.A. Rosario, ed. 1997). Some studies show that, given one twin with a same-sex orientation, the other twin will have a similar sexual orientation in roughly 50% of both male and female identical twins, but with lower rates in fraternal twins (males: 22%, females: 16%) and non-twin siblings (males: 9%; females: 14%). Baron, M., *Genetics and Human Sexual Orientation*, BIOLOGICAL PSYCHIATRY (June 1993); *see also* Bailey, J.M., et al., *Genetic and Environmental Influences on Sexual Orientation and Its Correlates in an Australian Twin Sample*, JOURNAL OF PERSONALITY AND SOCIAL PSYCHOLOGY (Mar. 2000). These data confirm a strong genetic contribution to sexual orientation, and although "the precise nature of these factors [has] yet to be understood" (Whitam 1993), the point is the same: whatever the proportion of that genetic contribution, it is not changeable.

The absence of a 100% concordance in sexual orientation between identical twins does not mean that sexual orientation is behavioral. This contention

fails for a number of reasons, including because of the different prenatal influences that even identical twins can experience. Hall, L.S. and Love C.T., *Finger-Length Ratios in Female Monozygotic Twins Discordant for Sexual Orientation,* ARCH. SEX. BEHAV. (Feb. 2003).

Lastly, twin studies consistently show that male sexual orientation is moderately heritable. For example, two twin studies in population-based samples both report moderate tendency to inherit characteristics, with the remaining variance being explained by non-genetic biological factors. *See* Mustanski, B.S., et al., *A Genomewide Scan of Male Sexual Orientation*, HUMAN GENETICS (2005).

B. Pedigree Studies Have Found that Sexual Orientation is Heritable in Families.

A pedigree study examines a particular family tree in an attempt to discover whether certain traits are prevalent coming down from a specific set of ancestors. Both male and female homosexuality appears to run in families. Pillard, R.C., et al., *Evidence of Familial Nature of Male Homosexuality*, ARCHIVES OF GENERAL PSYCHIATRY (Aug. 1986); Pattatucci, A.M.L. et al., *Development and Familiality of Sexual Orientation in Females*, BEHAVIOR GENETICS (Sept. 1995); Pillard 1996; Bailey, J.M. et al., *A Family History Study of Male Sexual Orientation Using Three Independent Samples*, BEHAVIOR GENETICS

(1999). "Powerful evidence exists that homosexuality runs in families, and no evidence contradicts it." Pillard 1996.[6]

C. Fraternal Birth Order Effect Confirms a Biological Origin of Sexual Orientation.

Over twenty published reports of sexual orientation reveal that homosexual orientation in men was statistically significantly correlated with increasing number of older brothers but not sisters. Dozens of analyses have reached the conclusion that the most consistent biodemographic correlate of sexual orientation in men is the number of older brothers (fraternal birth order). *See* Bogaert, A.F., et al., *Sexual Orientation, Fraternal Birth Order, and the Maternal Immune Hypothesis*, FRONTIERS IN NEUROENDOCRINOLOGY (2011). The 2011 study also demonstrated that non-biological siblings (*i.e.*, adopted or step older brothers) had no effect on men's sexual orientation.

---

[6] Mustanski B.S., et al., *A Critical Review of Recent Biological Research on Human Sexual Orientation*, ANNUAL REVIEW OF SEX RESEARCH (2002); Mustanski B.S., et al., *A Genomewide Scan of Male Sexual Orientation*, HUMAN GENETICS (Mar. 2005); Mustanski B.S., et al., *Mental Health Disorders, Psychological Distress, and Suicidality in a Diverse Sample of Lesbian, Gay, Bisexual, and Transgender Youths*, AMERICAN JOURNAL OF PUB. HEALTH (Dec. 2010); Newcomb M.E., et al., *Examining Risk and Protective Factors for Alcohol Use in Lesbian, Gay, Bisexual, and Transgender Youth: a Longitudinal Multilevel Analysis*, JOURNAL OF STUDIES ON ALCOHOL AND DRUGS (2012).

Id. Accordingly, the fraternal birth order effect cannot be attributed to social causes.

Ray Blanchard, PhD has likewise found that the most broadly established finding in the area of etiological research on homosexuality is that biological older brothers increase the odds of homosexuality in later-born males, even if they were reared in different households. In contrast, sisters, stepbrothers or adoptive brothers have no effect on sexual orientation. *See* Blanchard, R., *Fraternal Birth Order and the Maternal Immune Hypothesis of Male Homosexuality*, HORMONES AND BEHAVIOR (Sept. 2001); Blanchard, R., *Quantitative and Theoretical Analyses of the Relation Between Older Brothers and Homosexuality in Men*, JOURNAL OF THEORETICAL BIOLOGY (Sept. 21, 2004); Blanchard, R., *Detecting and Correcting for Family Size Differences in the Study of Sexual Orientation and Fraternal Birth Order*, ARCHIVES OF SEXUAL BEHAVIOR (July 2014).

Two recent discoveries, using a sample of 944 homosexual and heterosexual participants, showed that biological older brothers increase the odds of homosexuality, even if these older brothers were reared in a different household. To quantify the effect, "each additional older brother increases a male's odds of homosexuality by 33%." *See* Jannini, E.A., et al., *Male Homosexuality: Nature or Culture?* CONTROVERSIES IN SEXUAL MEDICINE (2010). Other studies have found that the effect of fraternal birth order would exceed all other causes of homosexuality in groups of gay men with three or more older brothers and would

equal all other causes in a theoretical group with 2.5 older brothers. *Id.*

Lastly, in a 2008 study, it was found that homosexuals had a significantly greater number of brothers compared with heterosexuals. Mean numbers of older sisters, younger brothers and younger sisters did not differ between homosexuals and heterosexuals. Iemmola, F., et al., *New Evidence of Genetic Factors Influencing Sexual Orientation in Men*, ARCHIVES OF SEXUAL BEHAVIOR (2009). Blanchard's theory attributes the birth order effect to H-Y androgens that do not affect older sisters. Blanchard, R., *Fraternal Birth Order and the Maternal Immune Hypothesis of Male Homosexuality*, HORMONES AND BEHAVIOR (Sept. 2001).

D. Prenatal Hormone Levels Affect Sexual Orientation.

Prenatal androgenic (male-like) hormone variations have been repeatedly highly correlated with many neurological, physiological and anatomical traits as well as sexual thought patterns, sexual orientation, and gender identity. Because all these innate traits typically express together with sexual orientation and gender identity, there are significant areas of overlap in their respective, mutual, biological causes.

The sexual determination of sexual organs happens in the first trimester, well before the sexual differentiation of the brain, which is completed in the

second trimester. Swaab, D.F., et al., *Sexual Differentiation of the Human Brain in Relation to Gender Identity and Sexual Orientation*, FUNCTIONAL NEUROLOGY (Jan.-Mar. 2009). It is therefore possible for the fetal brain to be imprinted differently than the fetal genitals, resulting in diversity of gender identity, and sexual orientation.

Another example of high prenatal androgen exposure among females is seen with girls who were gestated with a fraternal male co-twin. Some of the baby boy twin's testosterone in the amniotic fluid seeps into the baby girl's amniotic fluid, causing a cluster of androgenizing changes in the sexually dimorphic play patterns, neuroacoustic functioning, bone structure, teeth, subsequent risk of eating disorders, fetal brain anatomy, and sexual orientation. Cohen-Bendahan, C.C., et al., *Is There an Effect of Prenatal Testosterone on Aggression and Other Behavioral Traits? A Study Comparing Same-Sex and Opposite-Sex Twin Girls*, HORM. BEHAV. (Feb. 2005); Cohen-Bendahan, C.C., et al., *Prenatal Exposure to Testosterone and Functional Cerebral Lateralization: A Study In Same-Sex and Opposite-Sex Twin Girls*, PSYCHONEUROENDOCRINOLOGY (Aug. 2004); Voracek, M., et al., *Digit Ratio (2D:4D) in Twins: Heritability Estimates and Evidence For a Masculinized Trait Expression in Women From Opposite-Sex Pairs*, PSYCHOLOGICAL REPORTS (Feb. 2007); Dempsey P.J., et al., *Increased Tooth Crown Size in Females With Twin Brothers: Evidence For Hormonal Diffusion Between Human Twins in Utero*, AMERICAN JOURNAL OF HUMAN

BIOLOGY: THE OFFICIAL JOURNAL OF THE HUMAN BIOLOGY COUNCIL (Sept. 1999); Culbert, K.M., et al., *Prenatal Hormone Exposure and Risk for Eating Disorders: a Comparison of Opposite-Sex and Same-Sex Twins*, ARCHIVES OF GEN. PSYCHIATRY (Mar. 2008); Peper, J.S., et al., *Does Having a Twin-Brother Make For a Bigger Brain?*, EUR. J. ENDOCRINOLOGY (Feb. 18, 2009).

1. Congenital Adrenal Hyperplasia.

There is also compelling evidence for a contribution of prenatal hormones to the development of homosexual orientation. This is illustrated best by congenital adrenal hyperplasia ("CAH") due to 21-hydroxylase deficiency, a genetic condition in which female fetuses are exposed to unusually high levels of androgens produced by their own adrenal glands. In CAH, a specific gene causes a disturbance in the development of an enzyme (P450c21) in the cortisol synthesis pathway, resulting in a buildup of androgens (male hormones) in the fetal blood. Money, J., et al., *Bisexually Concordant, Heterosexually and Homosexually Discordant: A Matched-Pair Comparison of Male and Female Adrenogenital Syndrome*, PSYCHIATRY (May 1987); Ehrhardt, A.A., et al., *Psychosexual Development: an Examination of the Role of Prenatal Hormones*, CIBA FOUND. SYMP. (Mar. 14-16, 1978); Meyer-Bahlburg, H.F., et al., *Sexual Orientation in Women With Classical or Non-Classical Congenital Adrenal Hyperplasia as a Function of Degree of Prenatal Androgen Excess*, ARCHIVES OF SEXUAL BEHAVIOR (Feb. 2008). In 1976, this adrenal disease

was called "adrenogenital syndrome" because infant girls were born with large clitorises and more male-like active play patterns,[7] voices,[8] and some of the skeletal structure typical for boys.[9] Many of the affected females were observed to later identify as lesbian or bisexual in adulthood, and a small proportion were observed to have transitioned to a male gender identity.[10]

2. Xenoandrogens.

From 1940 to 1970, diethylstilbestrol was prescribed for women in the first trimester of pregnancy to prevent miscarriage, but was later found to be

---

[7] Hines, M., et al., *Androgen and the Development of Human Sex-Typical Behavior: Rough-and-Tumble Play and Sex of Preferred Playmates in Children With Congenital Adrenal Hyperplasia (CAH)*, CHILD DEV. (1994); Pasterski, V., et al., *Increased Aggression and Activity Level in 3- to 11-Year-Old Girls With Congenital Adrenal Hyperplasia (CAH)*, HORM. BEHAV. (Sept. 2007).

[8] Nygren, U., et al., *Voice Characteristics in Women With Congenital Adrenal Hyperplasia Due to 21-Hydroxylase Deficiency*, CLINICAL ENDOCRINOLOGY (Oxf.) (Jan. 2009).

[9] Breedlove, S.M., *Organizational Hypothesis: Instances of the Fingerpost*, ENDOCRINOLOGY (Sept. 2010).

[10] Meyer-Bahlburg H.F., et al., *Gender Development in Women With Congenital Adrenal Hyperplasia as a Function of Disorder Severity*, ARCHIVES OF SEXUAL BEHAVIOR (Dec. 2006); Nordenskjold, A., et al., *Type of Mutation and Surgical Procedure Affect Long-Term Quality of Life For Women With Congenital Adrenal Hyperplasia*, J. CLIN. ENDOCRINOL. METAB. (Feb. 2008).

ineffective and harmful. It also raised in a statistically significant way the chances of lesbian orientation in the female offspring, and possibly also male-to-female transsexualism in the male offspring. Ehrhardt A.A., et al., *Sexual Orientation After Prenatal Exposure to Exogenous Estrogen*, ARCHIVES OF SEXUAL BEHAVIOR (Feb. 1985). Prenatal exposure to phenobarbital and phenytoin has been linked to higher rates of undescended testes, genital anomalies, male homosexuality, and male-to-female transsexualism. Dessens, A.B., et al., *Association of Prenatal Phenobarbital and Phenytoin Exposure With Genital Anomalies and Menstrual Disorders*, TERATOLOGY (Oct. 2001); Dessens, A.B., et al., *Prenatal Exposure to Anticonvulsants and Psychosexual Development*, ARCHIVES OF SEXUAL BEHAVIOR (Feb. 1999).

E. Analysis of Male Genetic Material Indicates that Sexual Orientation is Heritable.

Research into the actual genetic material carried by males also shows that sexual orientation in men is a trait housed in their very DNA. Each person has two sex chromosomes, X and Y. A female has two X chromosomes while a male has an X and a Y, and any two parents each supply one chromosome each. A mother's contribution is always an X chromosome, a father's can be either an X or a Y, and will thus determine the chromosomal sex of the child. Thus, a threshold question in considering the heritability of

certain traits is whether that characteristic occurs in the X or Y chromosome.

For any male, a gene (or genes) located in the X chromosome is necessarily inherited from his mother. By means of comparative genetic studies of a number of pedigrees, William Turner's research in 1995 indicated that gene(s) for same-sex attraction of some homosexuals reside in the terminal region of the long arm of the X chromosome (denoted Xq28); *see also* Hamer, D.H. et al., *A Linkage Between DNA Markers on the X Chromosome and Male Sexual Orientation*, SCIENCE (Jul. 1993); Pattatucci, A.M.L., *Biopsychosocial Interactions and the Development of Sexual Orientation, in Lesbian, Gay, and Bisexual Identities in Families* (Oxford Univ. Press 1998); Pattatucci, A.M.L., *Molecular Investigations into Complex Behavior: Lessons from Sexual Orientation Studies*, THE INTERNATIONAL JOURNAL OF POPULATION BIOLOGY AND GENETICS (Apr. 1998); *see also* Blocklandt, S., et al., *Extreme Skewing of X Chromosome Inactivation in Mothers of Homosexual Men*, HUMAN GENETICS (Feb. 2006). Turner based his conclusions on evidence derived from his pedigree studies showing that homosexual males had a significantly higher incidence of having maternal uncles who are also homosexual, implicating some component of the X chromosome. Alan Sander's 2014 study, the largest study of homosexual brothers to date, supports these earlier findings that chromosome Xq28 influences sexual orientation and also found similar linkages for chromosome 8. Sanders, A.R., et

al., *Genome-Wide Scan Demonstrates Significant Linkage for Male Sexual Orientation*, PSYCHOLOGICAL MEDICINE (Nov. 2014).

F. Brain Studies Show the Biologic Roots of Sexual Orientation.

With analysis of human genetic material on one end of the spectrum, and outward manifestations (*i.e.*, sexual orientation) on the other, examination of subsidiary biology – in particular the brain anatomy and function – further undercuts the constitutionality of the Marriage Bans. Studies dealing with brain differences between heterosexual and homosexual men showed several significant differences. The interstitial nucleus of the anterior hypothalamus ("INAH3"), located more or less in the center of the brain, is two to three times larger in straight men than in gay men. LeVay, S.A. *A Difference in Hypothalamic Structure Between Heterosexual and Homosexual Men*, SCIENCE (Aug. 1991) ("LeVay 1991"). LeVay's study is highly suggestive that hormones and fetal brain development may be interrelated, and that the INAH3 structures of gay men were more similar to those of heterosexual females than to those of heterosexual males.

Moreover, other studies of the brain involving the anterior commissure, and the suprachiasmatic nucleus also showed structural differences between gay and straight men. Allen, L.S., et al., *Sexual Orientation and the Size of the Anterior Commissure in the*

Human Brain, PROC. NAT'L ACAD. SCI. (Aug. 1992); Swaab, D.F. et al., *An Enlarged Suprachiasmatic Nucleus in Homosexual Men*, BRAIN RESEARCH (Dec. 1990). For example, experimental studies more than forty years ago at the University of Kansas showed that manipulating the levels of testosterone during fetal development of guinea pigs and rats could influence the sexual behavior of the adult. These manipulations also affected the size as well as the structural characteristics of the sexually dimorphic nucleus in the brain. *See* LeVay 1991. As Bailey and his colleagues state, "[t]he most influential biologic theory of sexual orientation is that male homosexuality" results from less masculinized "relevant brain structures during prenatal development." Bailey, J.M. et al., *A Family History Study of Male Sexual Orientation Using Three Independent Samples*, BEHAVIOR GENETICS (1999); *see also* Savic, I., et al., *PET and MRI Show Differences in Cerebral Asymmetry and Functional Connectivity between Homo- and Heterosexual Subjects*, PROCEEDINGS OF THE NATIONAL ACADEMIES OF SCIENCES OF THE UNITED STATES OF AMERICA (Aug. 2008).

G. The Overwhelming Majority of Humans Self-Describe Their Sexual Orientation as Innate.

Taking a view of the scientific data as a whole, it can come as no surprise that they are consistent with the views of innateness of all sexual orientation shared by members of the gay and lesbian community. For

example, in a national survey conducted in 2010 with a representative sample of more than 650 self-identified lesbian, gay and bisexual adults, 95% of the gay men and 83% of the lesbian women reported that they experienced "no choice at all" or "small amount of choice" about their sexual orientation. *See* Herek, G.M., *Demographic, Psychological, and Social Characteristics of Self-Identified Lesbian, Gay, and Bisexual Adults in a US Probability Sample*, SEXUALITY RES. & SOC. POL'Y, (2010). *No* peer-reviewed published scientific studies support the hypotheses that life experience causes homosexuality, that sexual orientation is learned, that there is a psychological cause of homosexuality or that sexual orientation is chosen.

V. MISGUIDED EFFORTS TO CHANGE SEXUAL ORIENTATION PROVE THE INNATENESS OF THE TRAIT

Sexual orientation change efforts ("SOCE") are also relevant in considering the immutability of sexual orientation – regardless of what causes sexual orientation. The corollary to the argument in support of the Marriage Bans that sexual orientation is mutable and changeable is the grim reality that follows efforts to change individuals' sexual orientation. That is to say: if it were correct that gay people bore the brunt of the Marriage Bans because of their own "choice" and not because of innate characteristics, what would the practical consequence be of suggesting that the law's discrimination could be

avoided by making a different "choice"? The answer, unfortunately, is sobering, and entails the causation of severe depression, anxiety, and suicides. The clinical research disproves what some blithely misunderstand as merely a change in temporal expressions. Indeed, the most prominent proponent of SOCE has actually retracted his position on the grounds that the effects of SOCE were severely harmful to participants, as discussed below.

The consensus among the established medical community is that SOCE are generally futile and potentially dangerous to an individual's well-being, suggesting that sexual orientation is innate. *See* American Psychological Association, REPORT OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION TASK FORCE ON APPROPRIATE THERAPEUTIC RESPONSES TO SEXUAL ORIENTATION (2009) ("[E]fforts to change sexual orientation are unlikely to be successful and involve some risk of harm."); *see also* Posner, R.A., SEX AND REASON (Harvard Univ. Press 1992) (describing "failure of treatment strategies . . . to alter homosexual orientation"); Haldeman, D., *The Practice and Ethics of Sexual Orientation Conversion Therapy*, J. CONSULTING & CLINICAL PSYCHOL. (1994) (describing "lack of empirical support for conversion therapy"); *see also Perry v. Schwarzenegger*, 704 F. Supp. 2d 921, 966 (N.D. Cal. 2010) ("No credible evidence supports a finding that an individual may, through conscious decision, therapeutic intervention or any other method, change his or her sexual orientation.").

In fact, every major mental health organization has adopted a policy statement cautioning against the use of so-called "conversion" or "reparative" therapies to change the sexual orientation of gay and lesbian people. These policy statements are reproduced in a 2008 publication of the American Psychological Association, Just the Facts About Sexual Orientation and Youth, A Primer For Principals, Educators and School Personnel, available at http://www.apa.org/pi/lgbt/resources/just-the-facts.pdf. In a 2012 article, the American Academy of Child and Adolescent Psychiatry ("AACAP") advised clinicians that "there is no evidence that sexual orientation can be altered through therapy, and attempts to do so may be harmful." Adelson, S.A., et al., *Practice Parameters on Gay, Lesbian, or Bisexual Sexual Orientation, Gender Nonconformity, and Gender Discordance in Children and Adolescents*, J. AACAP (Sept. 2012). In a 2009 article in PEDIATRICS, documentation supported the conclusion that "minors who experience family rejection based on their sexual orientation face especially serious health risks." Ryan, C., et al., *Family Rejection as a Predictor of Negative Health: Outcomes in White and Latino Lesbian, Gay and Bisexual Young Adults*, J. PEDIATRICS (2009). The Pan American Health Organization, a regional office of the World Health Organization, issued a statement in May 2012, that sexual orientation change efforts "lack medical justification and represent a serious threat to the health and well-being of affected people." The American Academy of Pediatrics has found that "[t]herapy directed at specifically changing sexual orientation is contraindicated, since it can provoke

guilt and anxiety while having little or no potential for achieving changes in orientation." *Policy Statement, Homosexuality and Adolescence*, AM. ACAD. PEDIATRICS (1993). The American School Counselor Association, American Medical Association Council on Scientific Affairs and Public Health, National Association of Social Workers, American Counseling Association Governing Council, and American Psychoanalytic Association have all issued statements opposing SOCE.

The American Psychological Association summarized this history in its 2009 Task Force paper, *Report of the American Psychological Association Task Force on Appropriate Therapeutic Responses to Sexual Orientation*. The Task Force posed three questions: (1) are SOCE effective at changing sexual orientation; (2) are SOCE harmful; and (3) are there any additional benefits reasonably attributable to SOCE? To do so, the Task Force "decided to conduct a systematic review of the empirical literature on SOCE." *Id.* at 81. The Task Force found that "negative side effects" of those efforts included "loss of sexual feeling, depression, suicidality, and anxiety." *Id.* at 83. Moreover, the Task Force found that it does not work: "scientific evidence shows that SOCE is not likely to produce its intended outcomes. . . ." *Id.*

These empirical findings are borne out by tragic and personal experiences. *Amici Curiae* in the matter of (then) *Welch v. Brown* before the Ninth Circuit (now *Pickup v. Brown*), addressing a statute that proposed to ban SOCE in California, stated their perspective: "the serious harms that [survivors of

SOCE], their families, and others suffered because they were submitted to dangerous practices, illustrating the serious risk" involved (*see, e.g.*, *Amicus Curiae* Br. of Survivors of Sexual Orientation Change Efforts, In Support of Defendants-Appellants Urging Reversal at 1, 6, 8, 9, *Welch v. Brown* (No. 13-15023)). The personal testimony described the lengths to which SOCE tried to go (because the innate characteristic was naturally unresponsive to mere suggestion), including teaching participants that they were the result of "inadequate parenting," and being "sinful," all of which led to "periods of drug abuse and homelessness." *Id.* Tragically, one of the *Welch Amici Curiae* took his own life. More happily, the Ninth Circuit upheld the ban on SOCE, noting, "the well documented, prevailing opinion of the medical and psychological community that SOCE has not been shown to be effective and that it creates a potential risk of serious harm to those who experience it." *Pickup v. Brown*, 728 F.3d 1042, 1050 (9th Cir. 2013).

Conversely, the misguided view that SOCE proponents take is perhaps best illustrated by the experience of Dr. Robert L. Spitzer. An early proponent of destigmatizing the "disorder" classification of homosexuality, Dr. Spitzer nonetheless argued for years that SOCE could be effective. Dr. Spitzer presented a study in 2001 that claimed a majority of its participants had reported change "from a predominantly or exclusively homosexual orientation to a predominantly or exclusively heterosexual orientation." Benedict Carey, *Psychiatry Giant Sorry for*

Backing Gay 'Cure', NEW YORK TIMES (May 18, 2012). After years of corrective analysis, however, Dr. Spitzer was appropriately forceful in his retraction.

VI. THE STUDIES CITED BY SUPPORTERS OF OTHER MARRIAGE BANS FAIL TO DEMONSTRATE THAT SEXUAL ORIENTATION IS BEHAVIORAL

Against the backdrop of scientific consensus that innate factors are an essential component of sexual orientation, defenders of other marriage bans rely on misinterpretation of published studies that actually prove the opposite point.

A. Repeated Reliance on the Work of Lisa Diamond Actually Demonstrates that Sexual Orientation is Innate, Not the Reverse.

Probably the studies most distorted from their original conclusions are those of Dr. Lisa Diamond. Defenders of other marriage bans have cited Dr. Diamond liberally out of context (*see, e.g.*, *Amicus Curiae* Br. of Dr. Paul McHugh in Support of Hollingsworth and Bipartisan Legal Advocacy Group Addressing the Merits and Supporting Reversal at 8, 10, 21, 22, 25, 27, *Hollingsworth v. Perry*, 133 S. Ct. 2652 (2013) (No. 12-144)), as have other *Amici Curiae* who oppose marriage equality (*see, e.g.*, Frederick Douglass Foundation as *amicus* in the matter of *Golinksi v. Office of Personnel Mgmt.*, Nos. 12-15-388

and 12-15-409 (9th Cir. 2013)). Dr. Diamond's work has been cited for arguments it does not support, to the point that Dr. Diamond herself has felt compelled to speak out.

Diamond conducted a 2-year study and published her conclusions in *Sexual Identity, Attractions, and Behavior Among Young Sexual-Minority Women Over a 2-Year Period*, 36 DEVELOPMENTAL PSYCHOLOGY 241, 247 (2000). That study was cited in defense of the Defense of Marriage Act ("DOMA") (to argue against immutability) by the Frederick Douglass Foundation as *amicus* in the matter of *Golinksi v. Office of Personnel Mgmt.*, Nos. 12-15-388 and 12-15409 (9th Cir. June 11, 2012), ECF No. 59. The *amicus* argued that Diamond had found that "[h]alf of the young women in this sample relinquished the first sexual-minority identity they adopted." This is an oversimplification to the point of rendering Diamond's work unrecognizable. In fact, Diamond's 2000 paper starts from the premise that "sexual attractions appear fairly stable" once developed. 36 DEVELOPMENTAL PSYCHOLOGY at 246. Diamond acknowledges some fluidity in sexual identity as youth explore their sexual thoughts in a family, educational system and society that encourages one orientation over the other. Dr. Diamond, also notes that it "may be an inevitable consequence of the fact that most young women in this sample . . . experience attractions for both sexes. This non-exclusivity leaves open the possibility for multiple identities and behaviors over time, even when attractions remain stable." *Id.* at 246-47. In addition, Diamond points

out that "numerous researchers have argued that there is extensive overlap between lesbianism and bisexuality, and the findings here support this view." *Id.* at 247.

This overlap undercuts any attempt to convert self-identification of differing attractions over the study period into a categorical change of status. Diamond says no such thing. Indeed, given the identified overlap, it would follow naturally that at least some of the respondents would call themselves by a different sexual identity, even if their sexual attraction for a particular gender remained constant.

Diamond also published her analysis of a 10-year longitudinal study in 2008. *See Female Bisexuality from Adolescence to Adulthood: Results from a 10-Year Longitudinal Study*, DEV. PSYCHOLOGY (2008). Once again, the Frederick Douglass Foundation and McHugh conflate data concerning specific incidents of attraction with wholesale renunciation of sexual orientation. Diamond observes that "[b]y the 10-year point, 67% of participants had changed their identities at least once since T1, and 36% had changed identities more than once." *Id.* at 9. These statistics are not limited solely to lesbians, but to the entire pool of participants, which includes women who identify as bisexual, lesbian, or *who, critically, are undecided*. Bisexual and unlabeled women were more likely to switch between bisexual and unlabeled identities. Such a change is not a change between heterosexual and homosexual, necessarily, or even likely. Moreover, it makes perfect sense that persons

who initially identify as undecided later declare an orientation (either heterosexual or homosexual); that is not really a change at all. Sexual orientation is not binary, black and white, either or. Rather it is an innate urge that expresses on a spectrum as a result of the prenatal biology.

Finally, Diamond is again wrenched from her actual research in the *amicus* brief to the First Circuit in *Gill v. Office of Personnel Mgmt.*, filed by the National Association for Research & Therapy of Homosexuality ("NARTH"). NARTH claims that "[i]n the last decade Dr. Lisa Diamond reported significant longitudinal data that clearly shows the fluidity of the sexual orientation of women," pointing to *What We Got Wrong About Sexual Identity Development: Unexpected Findings From a Longitudinal Study of Young Women in Sexual Orientation and Mental Health: Examining Identity and Development in Lesbian, Gay, and Bisexual People*, SEXUAL ORIENTATION AND MENTAL HEALTH: EXAMINING IDENTITY AND DEVELOPMENT IN LESBIAN, GAY, AND BISEXUAL PEOPLE, 79 (A. M. Omoto & H. S. Kurtzman, eds. 2005). Once again, however, the fact that Diamond found sexual fluidity in her sample pool is partially attributed to the fact that 28% of participants were uncertain about their sexuality, and another 30% identified as bisexual. A significant percentage of those who were uncertain would be expected ultimately to adopt a sexual identity, thus resulting in a change in label but not of orientation.

Proponents of other marriage bans cite certain studies to suggest that if there are *any* environmental

influences on sexual attraction, sexual orientation cannot be an innate characteristic. This is plainly not so as a matter of logic, and the authority that petitioners cite actually confirms findings of genetic determination as well. *See* Langstrom, N., et al., *Genetic and Environmental Effects of Same-Sex Sexual Behavior: A Population Study of Twins in Sweden*, ARCHIVES OF SEXUAL BEHAVIOR (2010) ("LANGSTROM"). The *Golinksi amicus* brief by the Frederick Douglass Foundation at 9 cites Langstrom as "finding [that] genetic effects explained .34-.39 of the variance in men and .18-.19 of the variance in women and concluding that "'same-sex behavior arises not only from heritable but also from individual specific environmental sources.'" This concedes some genetic correlation, of course. *See* LANGSTROM at 77 ("Our results support the notion that same-sex behavior arises not only from heritable but also from individual-specific environmental sources.). Not only that, but the entire study's value is limited by the fact that findings of "same-sex behavior was relatively rare," *id.*, and that even in a sexually liberated country like Sweden, "the number of pairs where both twins choose to reveal same-sex behavior will remain limited." *Id.* at 79.

Not surprisingly, Dr. Diamond herself has flatly repudiated these strained interpretations. In particular, she noted "no matter how many times I endeavor to clarify what fluidity means, and what my research shows, it doesn't seem to matter." *See* HUFFINGTON POST, *The Doctor is Out . . . and Outspoken: An*

Interview with Dr. Lisa Diamond (May 12, 2012). To make the point clear, Dr. Diamond submitted an affidavit to the District Court in *Windsor v. United States*, 833 F. Supp. 2d 394 (S.D.N.Y. 2012), on August 20, 2011 in response to citations to her research, in which she reminded the Court:

> **My quoted statement** concerns the scientific and popular debates over the defining characteristics of LGBT individuals and it **says nothing whatsoever about the immutability of sexual orientation itself**. Hence, [petitioner Bipartisan Legal Advisory Group of the House of Representatives ("BLAG")] has incorrectly characterized my research. BLAG [ ] states [ ] that "according to multiple studies, a high number of persons who experience sexual attraction to members of the same sex early in their adult lives later cease to experience such attraction." In support of this claim BLAG provides the following quote from one of my articles: "50% [of respondents] had changed their identity label more than once since first relinquishing their heterosexual identity." **This quoted statement refers to sexual identity labels (i.e., how individuals describe and interpret their sexuality), and not to sexual orientation**.

Expert Affidavit of Lisa M. Diamond, Ph.D., No. 3:10-cv-01750-VLB (D. Conn.), Sept. 14, 2011, ECF No. 99, at pp. 2-3 (emphasis added). Dr. Diamond herself thus makes the point by negative implication: a change over time in the way individuals label their

levels of sexual attraction – particularly where one of the labels is the overlapping category of bisexual – does not even imply, let alone demonstrate, a fluidity of sexual orientation itself.

B. Additional Studies Cited By Defenders of Other Marriage Bans Do Not Support the Conclusion that Sexual Orientation is Behavioral.

Bearman, P., et al., *Opposite-Sex Twins and Adolescent Same-Sex Attraction*, 107 AM. J. OF SOCIOLOGY 1179, 1180 (2002), has been cited for the proposition that "efforts to establish genetic or hormonal effects on sexual orientation have been 'inconclusive at best.'" *See, e.g.*, McHugh Br. at 20.[11] This study involved 3,139 pairs of siblings who were in the seventh through twelfth grades, a time of sexual exploration and development. Of this pool, 784 pairs were twins. The biggest flaw with this approach is that the vast majority of individuals in the study were not involved in any same-sex sexual behavior (if any sexual behavior at all), and their youth precluded any firm establishment of orientation. In light of this limitation, the authors chose instead to focus on same-sex *attraction*, which is known to be fluid in youth as they begin to explore their sexual urges and navigate in a society that stigmatizes one orientation

[11] Dr. McHugh cites several studies for this proposition, all of which fail for the same reasons.

over the other. More to the point, the authors acknowledge that "the number of adolescents involved in homosexual relationships is too small in our sample to assess genetic influence statistically with any confidence." Bearman at 1200.

In its brief to the Court in *United States v. Windsor*, respondent BLAG cited Dr. Letitia Anne Peplau in support of its argument that the origins of sexual orientation are "not well understood," BLAG Br. at 55 (quoting JA 500), and that some people "cannot 'be readily characterized as heterosexual, homosexual, or perhaps bisexual.'" BLAG Br. at 56 (quoting Linda D. Garnets & Letitia Anne Peplau, *A New Paradigm for Women's Sexual Orientation: Implications for Therapy*, 24 WOMEN & THERAPY 111, 113 (2001). But the fact that scientists have not yet discovered exactly how sexual orientation is determined does not mean that there is any scientific debate about whether it is changeable. Similarly, as Dr. Peplau explained in a declaration submitted in this case, "the significant majority of adults exhibit a consistent and enduring sexual orientation." ¶ 23. Not only is sexual orientation stable for the significant majority of adults, but, as Dr. Peplau stated, BLAG is wrong to assert that sexual orientation is an amorphous category: "in national surveys in the U.S., nearly all participants are able to indicate their sexual orientation category." ¶ 15.

CONCLUSION

Sexual orientation is an innate human characteristic that deserves the full and equal protection of the law. GLMA and the Academy respectfully request that the Court reverse the Sixth Circuit.

Respectfully submitted,

GLMA: HEALTH PROFESSIONALS ADVANCING LGBT EQUALITY AND THE AMERICAN ACADEMY OF NURSING

By their counsel,

NICHOLAS M. O'DONNELL
Counsel of Record
CAITLIN C. FAHEY
SULLIVAN & WORCESTER LLP
One Post Office Square
Boston, MA 02109
(617) 338-2800
nodonnell@sandw.com

Counsel for Amici Curiae

HECTOR VARGAS
EXECUTIVE DIRECTOR
GLMA: HEALTH PROFESSIONALS ADVANCING LGBT EQUALITY
1326 18th Street, NW,
Suite 22
Washington, DC 20036
(202) 600-8037

March 5, 2015